UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
NGUYEN, TANH Q

ART UNIT	PAPER NUMBER
2182	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/619,989	BIRAN ET AL.
	Examiner	Art Unit	
	TANH Q. NGUYEN	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 December 2008 (RCE)</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-17 and 19-22</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-17 and 19-22</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>15 July 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)
1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 08-06)   Office Action Summary   Part of Paper No./Mail Date 20090216

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

December 8, 2008 has been entered.

Claim Objections

2.   Claims 1, 8-11, 13, 17, 19, 20, 22 are objected to because of the following

informalities:

        "the read operation" in line 4 of claim 1 should be replaced with --a read

operation-- to avoid insufficient antecedent basis.

        "the information stored in the buffer" in line 16 of claim 1 should be replaced with

--the indications of events stored in the buffer-- for consistency with the recitation in line

2 and avoid insufficient antecedent basis.

        Claim 8 recites "A communications device comprising the apparatus as claimed

in claim 1". Claim 9 recites "A data communications network interface comprising the

communications device as claimed in claim 8". The claims are objected to because

applicant considers the apparatus of claim 1 to be FIG. 17 in the response – hence

including memory 60 and host computer system 10, which are not within a data

communications network interface (i.e. NIC 80, per applicant's disclosure).

"interrupts" in line 4 of claim 10 should be replaced with --indications of events--
for consistency with claim 1.

"interrupts" in lines 1, 3 and 4 of claim 11 should be replaced with --indications of
events-- for consistency with claim 1, for consistency with "indications" in lines 6, 8, 9 of
claim 11, and for consistency with claims 13-15. In addition, "the information stored in
the buffer" in line 16 of claim 11 should be replaced with --the indications of events
stored in the buffer-- for consistency and avoid insufficient antecedent basis.

"jndications" in line 3 of claim 13 should be replaced with --indications--

"the read operation" in line 5 of claim 13 should be replaced with --a read
operation-- to avoid insufficient antecedent basis.

Claim 17 includes limitations that are similar to limitations recited in claim 1.
Claim 17 is therefore objected to on the same bases. In addition, claim 17 recites
"computer readable program code means" in various locations and is objected to -
because the expression "means" suggests a structure instead of code. Furthermore,
"computer usable medium" in line 1 of claim 17 should be replaced with --computer
storage medium-- to avoid interpretation of a transmission medium and to avoid
possible 101 issues.

Each of claims 19 and 20 includes limitations that are similar to limitations recited
in claim 11. Claims 19 and 20 are therefore objected to on the same bases. In
addition, claim 19 recites "computer readable program code means" in various locations
and is objected to - because the expression "means" suggests a structure instead of

code. Furthermore, "computer usable medium" in line 1 of claim 19 should be replaced with --computer storage medium--.

interrupts" in line 4 of claim 22 should be replaced with --indications of events-- for consistency with claim 1.

3.   Claims 2, 4, 21; 12, 14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 2 recites a limitation that is already claimed in the second line of the recitation pertaining to a controller of claim 1. Claim 4 recites a limitation that is already claimed in lines 3-4 of the recitation pertaining to a controller of claim 1. Claim 21 recites limitations that are already claimed in the second line and in lines 3-4 of the recitation pertaining to a controller of claim 1 (see line 3 and lines 6-7 of claim 21).

Claim 12 recites a limitation that is already claimed in lines 1-2 of the recitation pertaining to the step of determining of claim 11. Claim 14 recites a limitation that is already claimed in lines 3-4 of the recitation pertaining to the step of determining of claim 11.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5.   Claims 1-17, 19-22 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "said controller...generating...and comprising a payload portion" in lines 14-16. The claim is ambiguous because it suggests the controller comprising a payload portion. Clarification is required.

Claim 10 recites "a host processing system" in line 2, and "the host computer system" in line 4. Since applicant considers "a host **processing** system" as element 10 in the response, it is not clear to the examiner what element corresponds to the host **computer** system. Claim 10 also recites "forming a data processing system" in lines 3-4. It is not clear whether the apparatus, the host processing system and the data communications interface are part of the data processing system, or only the host processing system and the data communications interface are part of the data processing system. Clarification and identification of elements are required.

Claim 11 recites "said controller for, in response to a preset condition being met based on said indications" in lines 8-9. There is insufficient antecedent basis for "said controller" in the claim. Furthermore, it is not clear what applicant intends to claim in view of the recitation "in response to the preset condition being met" in line 10. Clarification is required.

Claim 11 recites "the steps of transferring interrupts comprising" in lines 2-3 and "generating...and comprising a payload portion" in lines 10-11. The claim is ambiguous because it suggests a step for transferring comprising a payload portion.

Claim 17 includes limitations that are similar to limitations recited in claim 1.

Claim 17 is therefore rejected to on the same bases.

Each of claims 19 and 20 includes limitations that are similar to limitations recited

in claim 11. Claims 19 and 20 are therefore rejected to on the same bases.

Claim 22 includes limitations that are similar to limitations recited in claim 10.

Claim 22 is therefore rejected to on the same bases.

6.   The rejections that follow are based on the examiner's best interpretation of the

claims.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

9.   Claims 1-5, 7-10, 11-17, 19-20 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Andrews et al. (US 5,968,158) in view of Mori et al. (US 5,715,452).

10.   As per claim 1, Andrews teaches an apparatus (1, FIG. 1; 12, FIG. 5) comprising:

        a buffer (68, FIG. 5; 90, FIG. 6) for storing indications of interrupts (INT BLOCK

1-INT BLOCK N, FIG. 6) generated by a peripheral device (10, FIG. 1), said apparatus

for transferring indications of interrupts from the peripheral device to a host computer

system (2, 4 – FIG. 1; col. 10, lines 55-59), and

        a controller (64, 74 - FIG. 5; DMA: col. 11, lines 15-19, 51) for, in response to a

preset condition being met, generating a control data block (a DMA data block) from the

indications of interrupts stored in the buffer to send the indications of interrupts to the

host computer via an LCP channel (col. 11, lines 15-19; col. 4, lines 60-65; col. 3, line

67-col. 4, line 11),

        wherein the preset condition comprises a determination that the buffer is full; a

determination that at least a predetermined plurality of indications of events is stored in

the buffer; a predetermined period has elapsed; and a determination that at least one

indication is stored in the buffer and that a predetermined period has elapsed (col. 11,

lines 22-47).

        Andrews essentially teaches the apparatus transferring the indications of

interrupts from the peripheral device to the host computer system using DMA instead of

sending a control data block comprising a payload portion having a plurality of fields,

each corresponding to an LCP channel and a header portion having an identifier for

identifying the control data block.

Mori teaches a peripheral device transferring blocks of data to another device by sending a control data block (400, FIG. 12) comprising a payload portion (420, FIG. 12) having a plurality of fields (421-1...421-n, FIG. 12), each field corresponding to a transfer block data, and a header portion (410, FIG. 12) having an identifier (411, FIG. 12) for identifying the control data block to accelerate the transfer of data by transferring more than one transfer block data at a time (col. 1, lines 55-61; col. 2, lines 61-64; col. 2, line 66-col. 3, line 2). Mori would have suggested to one of ordinary skill in the art at the time the invention was made to send a control data block to accelerate the transfer of data from one device to another device - in systems not equipped with DMA capability.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for an apparatus similar to the apparatus of Andrews, but without DMA capability, to send a control data block comprising a payload portion that includes a plurality of indications of interrupts and comprising a header portion with an identifier for identifying the control data block, as is suggested by Mori – in order to accelerate the transfer of the indications of interrupts.

Note that Andrews teaches a plurality of LCP channels (col. 4, lines 60-65; col. 3, line 67-col. 4, line 11) – hence each field in the payload portion of the control data block corresponding to an LCP channel when only indications of interrupts corresponding to the LCP channels are stored in the buffer. McAlpine et al. (US 6,070,219) provides further evidence that each indication of interrupt correspond to an LCP channel in network controller (col. 5, lines 63-67; col. 6, lines 47-49).

11.   As per claims 2-4, see the teachings of Andrews (col. 11, lines 22-47).

12.   As per claim 5, Mori teaches the header portion comprising a count (413, FIG.

12; col. 8, lines 30-32) indicative of the number of transfer data block included in the

payload portion.

13.   As per claim 7, Andrews the buffer comprising a FIFO memory buffer (col. 10,

line 60-col. 11, line 7).

14.   As per claims 8-9, Andrews teaches a communications device (communication

portion of 10, FIG. 4) comprising the apparatus of claim 1; and a data communications

network interface (10, FIG. 4) comprising the communications device.

15.   As per claim 10, Andrews teaches the apparatus (1, FIG. 1) further comprising a

host processing system (2, 4 - FIG. 1) having a memory (89, FIG. 4), a data

communications interface (10 – FIG. 1, FIG. 4) for communicating data between the

host computer system and a data communications network (7 - FIG. 1, FIG. 4), the host

processing system and the data communications interface forming a data processing

system for controlling flow of interrupts from the data communication interface to the

memory of the host processing system (see rejection of claim 1 above).

16.   As per claim 11, the claim generally corresponds to claim 1 and is rejected on the

same basis, with Andrews further teaching the peripheral device having a plurality of

ports (FIG. 5; rejection of claim 1 above), and with each field of the payload portion

corresponding to a different LCP channel being no more than an obvious variant of

each field of the payload portion corresponding to an LCP channel (i.e. a special

instance where the buffer stores a plurality of indications of interrupts, with only one

indication of interrupt per LCP channel).

17.   <u>As per claims 12- 16</u>, see the rejections of claims 1-5, 7 above.

18.   <u>As per claims 17, 19, 20</u>, see the rejections of claims 1 and 11 above.

19.   Claims 6, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Andrews et al., in view of Mori et al., and further in view of Yu (US 6,765,685) or

Hughes (US 6,493,772).

20.   <u>As per claim 6</u>, Mori does not teach the header portion comprising a time of day

stamp. Yu teaches generating a time stamp to indicate when a file is created (col. 7,

lines 13-15). Hughes teaches using a time stamp to indicate when an I/O process is

created for tracking purposes (col. 6, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made for the header portion to comprise a time of day stamp in order to

indicate when the control data block is created (as is suggested by Yu and Hughes),

and also to use the time of day stamp for tracking the processing of the control data

block (as is suggested by Hughes).

21.   <u>As per claim 21</u>, see the rejections of claims 2-7 above.

22.   <u>As per claim 22</u>, see the rejection of claim 10 above.

Response to Arguments

23.   Applicant's arguments with respect to the pending claims have been considered

but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANH Q. NGUYEN whose telephone number is (571)272-4154. The examiner can normally be reached on M-F (9:30AM-6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TARIQ HAFIZ can be reached on (571)272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TANH Q. NGUYEN/
Primary Examiner, Art Unit 2182

TQN: February 17, 2009